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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/04/2001

Stefan Wahl

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07/11/2005

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3213

EXAMINER

BHANDARI, PUNEET

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 07/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,174

Applicant(s)

WAHL ET AL.

Examiner

Puneet Bhandari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/29/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09/04/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The subject matter of this application requires illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81.

Examiner suggests, a flow chart corresponding to the method claim 1 and a figure corresponding to an apparatus claim 7 and would facilitate understanding of claimed invention to one of ordinary skill in the art.

No new matter may be introduced in the required drawing.

Claim Objections

2. Claims 7, 10 & 12 objected to because of the following informalities:

Regarding claim 7, an objection is made to the use of phrase "capable of" on page 5, line 9. The use of this phrase is an optional language (see MPEP 2106.II.C)

Regarding claim 10, on page 6, line 7 "sad transmission" should be changed to "said transmission".

Regarding claim 12, on page 6, line 14 " second transmitting/receiving device" should be changed to "first transmitting/receiving device".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim **1-3 & 9-11** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Momona (US 5,815,660). The Momona (US 5,815,660) reference teaches all of the limitations of the listed claims with the reasoning that follows.

Regarding claim **1**, a method of transmitting a data packet from a first transmitting/receiving device to a second transmitting/receiving device is anticipated by *"communication between master and slave"* is disclosed in column 01, lines 8-10 comprising the following steps:

transmission of at least two transmit authorizations from the second transmitting/receiving device to the first transmitting/receiving device is anticipated by *"master station transmits polling signal to each slave station"* disclosed in column 01, lines 24-25.

transmission of data packet from the first transmitting/receiving device to the second transmitting/receiving device following the reception of transmit authorizations is anticipated by *"upon receiving polling signal slave transmits data packet"* disclosed in column 1, lines 27-30.

Interruption of the transmission of transmit authorizations from the second transmitting/receiving device to the first transmitting/receiving device following the reception of the data packet is anticipated by *"master station is provided with a means to stop sending the polling signal to slave station"* disclosed in column 01, lines 62-65.

Regarding claim **2**, at least two authorizations are sent from the second transmitting/receiving device to the first transmitting/receiving device, when a further

data packet is expected, is anticipated by *"slave station having transmission data has to be kept waiting until it receives the polling signal"* disclosed in column 1, lines 42-44 and the transmission of the transmit authorizations from the second transmitting/receiving device to the first transmitting receiving device is interrupted again as soon as the second transmitting/receiving device has received the further data packet is anticipated by *"master station is provided with a means to stop sending the polling signal to slave station"* disclosed in column 01, lines 62-65.

Regarding claim 3, following the interruption of the transmission of transmit authorizations from the second transmitting/receiving device to the first transmitting/receiving device, at least two transmit authorizations are sent from the second transmitting device to a third transmitting device is anticipated by *"A polling system has been used as one of the methods for competition controlling slave station on a multiple access channel"* disclosed in column 1, lines 20-23, and the transmission of the transmit authorization from the second transmitting/receiving device to the third transmitting receiving device is interrupted as soon as a data packet from the third transmitting/receiving device has been received in the second transmitting/receiving device is anticipated by *"master station is provided with a means to stop sending the polling signal to slave station"* disclosed in column 01, lines 62-65.

Regarding claim 9, limitation the second transmitting/receiving device (master) automatically interrupts the transmission of transmit authorizations (polling) from the second transmitting/receiving device (master) to the first transmitting/receiving device (salve) in response to receiving the data packet (stop polling signal) disclosed in column

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04, line 61-67 and column 05, lines 1-14. The reference teaches that master station stops polling the slave station when the slave station sends request to stop polling.

Regarding claim **10**, limitation the second transmitting/receiving device (master) automatically resumes the transmission of the transmit authorizations (polling) after a predetermined time period, said transmission is resumed shortly before next data packet is expected to be sent from the first transmitting/ receiving device (slave) is disclosed in column 5, lines 15-63. The reference teaches that master transmits the polling signal at predetermined time period, when the slave has a data packet to be sent.

Regarding claim **11**, limitation the data comprises of user data information or communication data is disclosed in column 4, lines 24-40. The reference discloses that slave station transmit data (data information or communication data).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim **4,6-8 & 13** is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Eng (US 5,963557). The Eng (US 5,963557) reference teaches all of the limitations of the listed claims with the reasoning that follows.

Regarding claim **4**, a method for sending transmit authorization from a first transmitting/receiving device to a second transmitting/receiving device is clearly

anticipated by "*each subscriber station is polled and transmit a signal to the head end*" disclosed in column 3, lines 49-50; wherein transmitting authorizations are

Sent to the second transmitting/receiving device in a first time period and wherein the first time period is shorter than a second time period which adjoins the first time period and in which no transmit authorizations are sent to the second transmitting/receiving device is anticipated by "*Uplink channel is divided in time slots and mini time slots*" disclosed in column 4, lines 12-15 and column 4, lines 24-25.

Regarding claim 6, further comprising the step: at least in a time slot of second time period, transmit authorizations are sent to a third transmitting/receiving device is anticipated by "*slot assignment reservation protocol*" disclosed in column 4, lines 33-35.

Regarding claim 7, a control center for multiple access system comprising a control unit for controlled transmission of transmit authorizations to transmitting/receiving devices is anticipated by "*head end has a head end controller*" disclosed in column 01, lines 43 & 44 and Figure 1.

wherein the control unit is capable of sending at least two transmitting authorizations to a transmitting/receiving device and of interrupting the transmission of transmit authorizations to the one transmitting/receiving device as soon as the control center has received a data packet from the one transmitting/receiving device is anticipated by "*the head end receives the reservation request control packets from mini-slots and responds by assigning one or more slots to each requesting subscriber*" disclosed in column 4, line 50-55.

Regarding claim 8, the control center having the form of a head end or a hub of a HFC or HFR system, a control center of a hyperLAN system, or a base station of a LMDS or UMTS system, is anticipated by "*Hybrid fiber coaxial cable network having head end*" disclosed in column 1, line 41 and Fig. 1; and the transmitting/receiving devices each having the form of a cable modem or a radio station is anticipated by "*Subscriber stations, such as cable modems, set top boxes or data terminals*" disclosed in column 1, lines 56-57.

Regarding claim 13, Fig.7 anticipates limitation first transmitting/receiving device is a control center (subscriber station) and the second transmitting/receiving device is a terminal (headend).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over Momona (US 5,815,660) in view of Eng (US 5,963,557).

Regarding claim 5, Momona (US 5,815,660) teaches all the limitations of the claim 5 (see 102 rejection for claim 1 above) except Momona (US 5,815,660) fails to disclose the time interval between two authorizations fulfilling predetermined delay jitter requirements. Eng (US 5,963,557) discloses a technique of varying the time division pattern of upstream channel by modifying the ratio of mini-slots (transmit authorizations)

and slots (data packets) (see column 6, line 35-40). At the time invention was made it would have been obvious to a person with ordinary skill in art to modify the method of transmitting data packet of Momona (US 5,815,660) by adding a technique of varying the ratio of mini-slots and slots allocation in upstream channel used for transmitting and receiving data packets between devices. One in ordinary skill in art would have been motivated to do this to increase the utilization of bandwidth in communication channel (see column 6, lines 30).

Regarding claim 12, Momona (US 5,815,660) teaches all the limitations of the claim 5 (see 102 rejection for claim 1 above) and Momona also teaches transmit authorization are transmitted only in the time periods in which data packet is expected to be sent from the first transmitting/ receiving device (salve) is disclosed in column 5, lines 15-63. The reference teaches that master transmits the polling signal at predetermined time period, when the slave has a data packet to be sent. Momona fails to disclose transmit authorizations are transmitted at a high rate to fulfill predetermined delay jitter requirements. Eng (US 5,963,557) discloses mini-time slots (transmit authorizations) are allocated wider bandwidth to lower the access delay (predetermined delay jitter requirement) column 9, lines 51-56. At the time invention was made it would have been obvious to a person with ordinary skill in art to modify the method of transmitting data packet of Momona (US 5,815,660) by adding a technique transmitting transmit authorization at a high rate to fulfill predetermined delay jitter requirements. One in ordinary skill in art would have been motivated to do this to increase the utilization of bandwidth in communication channel (see column 9, lines 49-53).

Response to Arguments

9. Applicant's arguments filed 3/29/2005 have been fully considered but they are not persuasive.

Regarding claim 1, Applicant argues that Momona's teaching of stopping the transmission of the polling signal to an inactive slave station is not similar to interrupting the transmission of the transmit authorization when a data packet is received. Applicant also argues that Momona's fails to teach interrupting the transmission of the polling signals in response to receiving data regarding the next communication. These contentions are noted. However, Momona teaches the concept of stopping (interrupting) the transmission of the polling signal (transmit authorization) to an inactive slave upon receipt of a signal (data packet) from the slave station (first transmitting/ receiving device) requiring the master station (second transmitting/ receiving device) to stop polling as spoken of in column 1, lines 62-65 and further in column 4, lines 59-67. It is held that these teachings anticipate the limitations of claim 1.

Regarding claim 4, Applicant argues that Eng teaching of mini time slots and regular time slots is not similar to having a first time period adjoin a second, longer time period in which no transmit authorizations are sent. This contention is noted. However, Eng teaches an uplink channel that is divided into adjoined time slots (second time period) and mini time slots (first time period) as spoken of in column 4, lines 12-15, lines 24-25 and further disclosed in fig. 2. It is held that these teachings anticipate the limitations of claim 4.

Regarding claim 6, Applicant argues that Eng fails to teach or suggest transmitting authorizations in a second time period. This contention is noted. However, Eng teaches slot assignment reservation protocol where a head-end writes control packets (authorizations) into slots (second time period) of the down stream channel indicating which slots are assigned to each subscriber stations (transmitting/receiving device). It is held that these teachings anticipate the limitations of claim 6.

Regarding claim 7, Applicant argues Eng's method of assigning timeslots is not similar to sending at least two authorization signals to the same device and interrupting the transmission of authorization signals as soon as data packet is received. This contention is noted. However, the use of the phrase "capable of" on page 5, line 9 constitute optional language (see MPEP 2106.II.C) that does not limit the scope of claim 7. Therefore, it is held that Eng anticipates the limitation of claim 7 for the reasons provided in the above art rejection section.

Regarding claim 5, Applicant argues Eng fails to teach or suggest the considerations of delay jitter requirements. This contention is noted. However Eng teaches varying time division pattern of upstream channel by modifying the ratio of mini-slots and slots (see column 6, lines 35-40). Eng further teaches mini-slots (transmit authorizations) are allocated wider bandwidth to lower the access delay (predetermined delay jitter requirement) column 9, lines 51-56. It is held that these teachings anticipate the limitations of claim 5.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Gu et al. (US 6,744,780), Choi (US 5,745,769) and Guo et al. (US 5,577,043).

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Puneet Bhandari whose telephone number is 571-272-2057. The examiner can normally be reached on 9.00 AM To 5.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lb



FRANK DUONG
PRIMARY EXAMINER

Puneet Bhandari
Examiner
Art Unit 2666